Instructor: Dan Stanescu, 218 Ross Hall, Tel. 766-4380, stanescu@uwyo.edu.
Class time & room: MWF, 2:10PM-3:00PM, RH308.
Office Hours: MT 10:00-11:00AM and by appointment.
Texts: Applied Mathematics D. Logan, Wiley, 2006, and Green’s Functions and Boundary
Value Problems by I. Stakgold, Wiley, 1998. We’ll use the first text heavily but will also refer
to the second occasionally (more so in the next semester).
Course Description This first semester consists of a survey of topics and methods of applied
mathematics that find their application in physics and engineering. We will tentatively cover
dimensional analysis and scaling, perturbation methods and asymptotic analysis, calculus of
variations, integral equations, eigenvalue problems and Green’s functions.
Prerequisites The lectures will assume some knowledge of the theory of ordinary differential
equations and linear algebra. Math4200 and/or Math4400 are also considered prerequisites for
this class. However, if you have problems meeting the prerequisites, please do talk to me before
giving up.

GRADING

• Homework: 60% There will be six sets of homework problems assigned during the course.
The problems will be mostly of analytical nature, but some may benefit from the use of Maple,
see below. The solutions must be turned in within one week from the date you’ve been assigned
the homework. No make-ups for homeworks; however, your worst homework grade will not
be taken into consideration. You should strive to explain as well as possible your solution in
writing, not only put the final result on paper. This will increase your chance of getting a better
grade, since I can follow your thinking even if your final result is incorrect. It will also greatly
improve your writing skills.
• Final exam OR project: 40%. Whether we have a final or a project will be decided during
the semester, in common agreement with the class.

SOFTWARE

I strongly recommend the use of Maple, a high-level interpreted language which is very easy to
use, for solving with ease those problems requiring heavy algebraic manipulation. Familiarizing
yourself with Maple has an important long-term advantage: it will allow you to use its symbolic
calculation capability with great ease for other classes. I registered this class for the Maple
adoption program, which means that you can get a copy of the most current Maple version at
a bargain price. To do that you’ll need a code that you can get from me. Some examples that
I’ll present in class will use Maple code to illustrate the concepts.

The information contained herein is tentative. If the instructor finds that changes are neces-
sary, he will announce them in class. If you have a physical, learning, or psychological disability
and require accommodatio ns, please let me know as soon as possible. You will need to register
with, and provi de documentation of your disability to, University Disability Support Services
(UDSS) in SEO, room 330 Knight Hall, 766-6189, TTY: 766-3073.